Econ 201: Introduction to Economic Analysis

November 4 Lecture: Introduction to Macroeconomics

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Daily dose of The Far Side

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Preview of this class session

- Macro vs. micro
- Key variables of macroeconomics
- Macroeconomic models
- Growth and fluctuations
- Brief history of macroeconomic theories of business cycles
- Brief history of theories of economic growth

Microeconomics vs. macroeconomics

- Complementary approaches
  - Micro studies individual households, firms, and industries
  - Macro studies relationships among aggregate economic variables such as aggregate income, inflation, employment and unemployment
- Biological analogy
  - Can study a forest at the level of individual trees or even individual cells
    - This is like microeconomics
  - Interactions and aggregations are so complex that it might be more useful to study overall forest health using only aggregate variables: rainfall, temperature, pests, soil, etc.
    - This is like macroeconomics
- Both are useful and in a perfect world, we could combine them

Scientist vs. engineer

- Mankiw makes this distinction in his paper
- **Scientists** want to learn and test underlying scientific principles
  - Why do things work the way that they do?
  - What general principles can we learn that might apply in other situations?
  - Macroeconomists: What are the key variables affecting consumer behavior and why?
  - "Bottom-up" models
- **Engineers** want to solve problems
  - How can we use what we know about science to do something useful?
  - Macroeconomists: How can we forecast the direction of the economy next year? What would happen if we implemented some policy?
  - "Top-down" models
- Macroeconomists do both: Academics are usually scientists; business economists are usually engineers

Variables of macroeconomics

- **Gross domestic product** (gross national product/income)
  - Measures aggregate income and output of an economy
- General **price level** and **inflation rate**
  - Note distinction between general price level and relative prices
  - General price level is an index of all of the prices in the economy
- Aggregate **employment** and **unemployment**
  - Often expressed as percentage of labor force
- **Interest rates** (real and nominal)
- **Exchange rates** between currencies
- Balance on **international transactions**

Macroeconomic models

- **Model**: Simple representation of complex system
  - Designed to illustrate basic properties of system in easily understood way
  - All models simplify away most of the system
  - Good models simplify details not needed for property we want to study
  - You cannot answer questions about parts you simplify away!
- Macroeconomic models are **equations** expressing relationships among **aggregate variables**
  - Equations represent economic **assumptions**
- "Output" of macro model: Conclusions about how exogenous variables affect endogenous variables
  - Different assumptions often lead to different conclusions

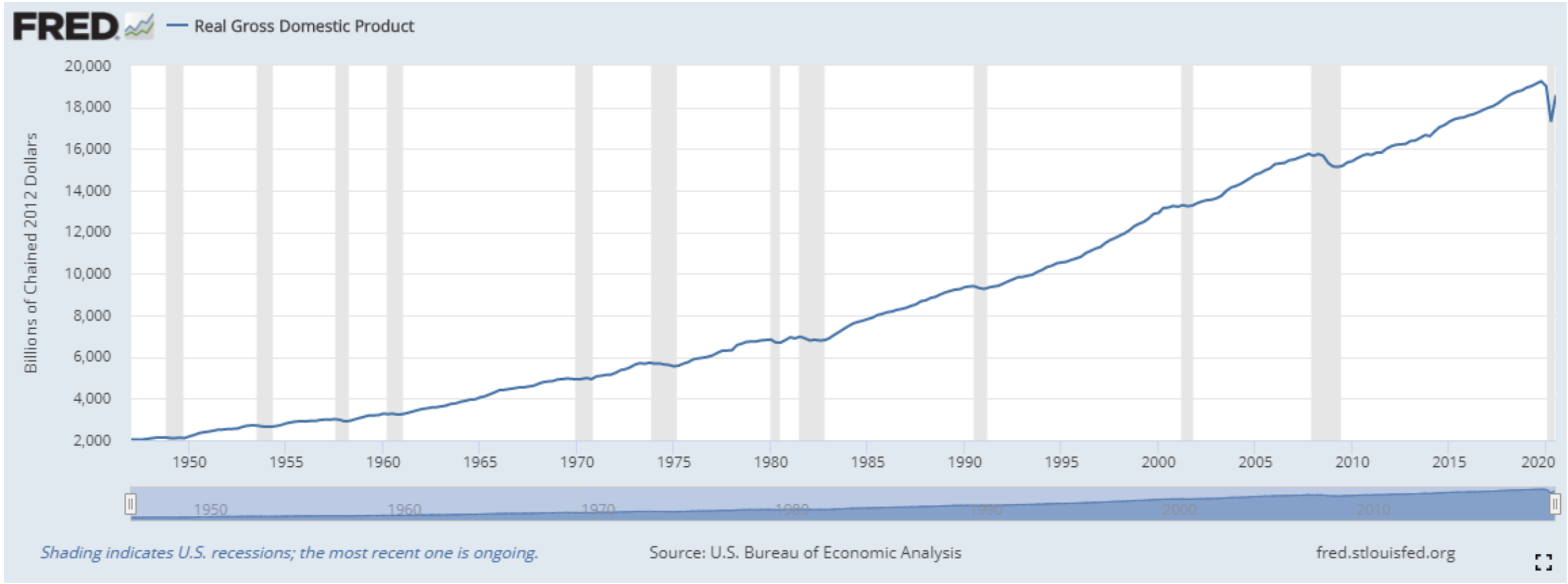
Exogenous and endogenous variables

- **Exogenous variables** are determined outside the model
  - Weather, political variables, pandemics, natural disasters
- Other variables in model are assumed not to affect exogenous variables
- **Endogenous variables** are the ones whose determination we are trying to represent with the model
  - GDP, inflation, employment and unemployment, interest rates
- We solve the model for "**multipliers**" of the form $\Delta Y/\Delta X$
  - Y is endogenous; X is exogenous
  - Multiplier measures effect of change in X on the value of Y under the assumptions of the model

Evolution of macroeconomic thought

1. Start with existing, “accepted” theories
2. New event happens that can’t be explained
3. New theories try to explain event
4. Volumes of empirical testing to determine if new theories are consistent with new and old data
5. If new theories are not rejected by data, they may gain acceptance and become part of #1
6. If new theories are rejected, we go back to #3

Growth and cycles



Theories of business cycles

- Classical macroeconomics (before 1935)
  - Bottom-up model based on competitive general equilibrium
  - Added quantity theory of money to explain general price level ($MV=PY$)
- Keynes and Keynesian macroeconomics (1935 – 1975)
  - *General Theory* explained underutilization during Great Depression
  - Top-down model emphasizing aggregate demand
- Neoclassical (1975 –)
  - Bottom-up model: Modernized classical model to explain fluctuations
  - Modern "dynamic stochastic general-equilibrium" models
- New Keynesian (1978 –)
  - Bottom-up version of aggregate-demand based model

Theories of (trend) economic growth

- Neoclassical Solow growth model (1956 –)
  - Dynamic top-down classical model with exogenous population and technology growth
  - Productivity growth slowdown 1973 – 1995: Why?
- Endogenous-growth models (1986 –)
  - Bottom-up models examining microeconomic underpinnings of R&D, human-capital investment, and technological progress
  - Attempt to explain technological growth rather than taking it as constant
  - General-equilibrium models that model appropriability and a Red-Queen-style dynamic equilibrium

Our approach to macroeconomics

- Simple sketches of the main models of growth and business cycles
- Discussion in passing of important historical episodes
- (Almost) everything done graphically rather than in algebra or calculus
- Macroeconomics is much less settled than micro
  - Most of the micro we studied has been around for decades, some for centuries
  - The macroeconomy changes frequently, requiring new theories
  - Not all macroeconomists agree on the best approach
    - Sticky wages/prices vs. market-clearing models

Review

- Macroeconomics examines relationship among aggregate variables
- Two key phenomena: long-run growth and short-run fluctuations
- Models use equations to connect exogenous and endogenous variables
- Macroeconomic models have evolved over time as economy changed

Daily diversion

From *The Devil's Dictionary*:

mind, *n.*, A mysterious form of matter excreted by the brain. Its chief activity consists in the endeavor to ascertain its own nature, the futility of the attempt being due to fact that it has nothing but itself to know itself with.

What comes next?

- After Friday's exam, we spend Monday talking in more detail about important macroeconomic variables
- Monday's case study looks at empirical work on the connection between macroeconomic variables and survey measures of happiness
- There is no problem set for next week